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PATENT SPECIFICATION



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COMPLETE SPECIFICATION.

Improvements in Hook Attachments for Ladders.

I, GEORGE KENNETH HURD, a Subject of the King of Great Britain, of 381, Montrose Avenue, in the City of Toronto, County of York, Province of Ontario, in the Dominion of Canada, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

- 10 The principal object of this invention is to provide a device which may be easily and securely attached to the rungs of a ladder at any desired position throughout its length which will greatly facilitate the
- 15 placing of the ladder in position so that it may be securely anchored to a window sill, parapet, ridge or other portion of a building where firemen or workmen are required to operate.
- 20 A further object is to provide a strong and dependable hook attachment which may be easily and quickly attached to or removed from a ladder without the use of tools and which when removed may be
- 25 readily carried in a convenient manner ready for instant use, thus enabling the easy handling of the ladder in loading same on or removing from a truck.

A further important object is to devise

30 a hook attachment which will be readily adjustable to any width of ladder so that the hooks will engage the rungs close to the side rails and there will be no danger of the hooks slipping sideways, and further, to provide a secure lock for the hooks

35 so that they cannot become displaced when moving the ladder over obstacles that may be encountered in working around a building.

- 40 The principal feature of the invention consists in providing a hook attachment for ladders comprising a pair of U-shaped frame members having their open ends

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over-lapping and slidably adjustable with means for slidably connecting and locking 45 the overlapping portions of the frame members to form a rigid rectangular frame to fit between the side rails of a ladder, each of the frame members having a hook bar mounted thereon to engage a 50 ladder rung and an anchor hook member provided with an extension bar slidably mounted therein and formed with a hooked end to engage and interlock with an adjacent ladder rung, spring means being 55 provided to hold the anchor hook members in an extended position.

In the accompanying drawings Fig. 1 is a side elevational view of a ladder provided with my improved hook attachment 60 shown in operative position with the anchor hooks engaging the ridge of a building,

Fig. 2 is a perspective view of my improved attachment shown arranged in 65 position on a ladder,

Fig. 3 is an elevational view of a modified construction of the attachment shown in Fig. 2 shown detached from a ladder having one of its adjustable hook members 70 shown folded parallel with its supporting frame,

Fig. 4 is an enlarged sectional detail view of a portion of the attachment shown in Fig. 3 illustrating the manner of locking 75 the hooks from accidental displacement and the adjustable feature of the hook supporting frame, and

Fig. 5 is a perspective detail view of one corner of the frame and a portion of one 80 of the hooks showing the hook lock of the attachment shown in Fig. 3.

In the form of the invention illustrated in Fig. 2 a rectangular frame 1 is formed of a pair of flat metal bars 2 each bent 85 transversely at right angles and having

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the right angled portions 3 overlapping, said overlapping portions each having a longitudinal slot 4 therein, a bolt 5 with a wing nut, extending from each overlapping member through the adjacent and registering slot of the other.

The upper ends of the members 2 each have secured to their inward sides by suitable rivets or otherwise a right angular shaped member 6, one leg of which extends about half the length of the member 2, thus forming shoulders 7 on the inward sides. The angled portions 8 overlap in a manner similar to the portions 3 of the lower angled members and are each formed with a longitudinal slot 9 therein and a bolt 10 with a wing nut, secured in each overlapping member extend through the adjacent and registering slot of the other.

The frame thus formed of two U-shaped sections lying sideways may by loosening the bolts be expanded or contracted laterally so that the side bars will fit snugly against the side rails 11 of the ladder.

Attached to each of the angled bars 6 at their corners by rivets or otherwise are short flat bar members 12 extending right angularly from the frame and the outer ends 13 thereof are turned downwardly forming hooks which are adapted to hook over a rung 14 of the ladder.

Mounted on the top of the bar hook members 12 are short Z-shaped brackets 15 which form spaces above the frame members 6.

Holes are bored or punched in the brackets 15, the hook bars 12 and the lower frame members 8 in vertical alignment and through these holes are inserted the vertical round sectioned bars 16, the upper ends of which are bent into the anchor hooks 17 which are adapted to form the means for engaging a projection of a building where a ladder may be placed.

Lock washers 18 through which the bars 16 are threaded are housed in the spaces between the flat hook bars 12 and the brackets 15 and these washers are each formed with an angled lug 19 to tip the washer into locking contact with the bar 16. Lugs 20 are arranged diametrically opposite the lugs 19 to enable the operator of the device to tilt the washers to unlock the hook.

The bars 3 are each formed with holes aligned with the holes in the top bars of the frame and the bars 16 extend there-through and are formed with short hook ends 21, turned in the opposite direction to the gripping hooks 17. These short hooks are adapted to hook around a rung of the ladder below the rung upon which the frame is mounted on the hooks 13.

Square metal blocks 22 are pinned securely on the hook bars 16 in such a posi-

tion that when the hook ends 21 are securely hooked around a ladder rung with the frame hooks 13 engaging the next rung these blocks will engage the underside of the angled bars 8 and the square sides of the blocks engaging the side bars 6 hold the hooks 17 in the out-turned engaging positions.

Coiled compression springs 23 encircle the round hook bars and engage the bars 7 3 and hold the blocks 22 up tight against the top of the frame.

When it is desired to remove the hook attachment from the ladder, the operator by pressing upward on the lugs 20 of the lock washers frees the hook bars which may then be pushed down against the springs until the hook ends 21 disengage the lower rung and the device will slip off the ladder.

In placing the attachment on a ladder the hook ends 21 are merely hooked around a rung, then by pulling upwards on the frame to slide on the hook bars 16 the hooks 13 of the frame are slipped over the next rung and on release of the frame the hooks 13 are drawn snugly into place against the rung by the springs and the frame is then held for displacement by the lock washers 18.

If the frame of the attachment does not fit snugly against the side rails of the ladder, it is merely necessary to loosen the wing nuts then spread the frame laterally and tighten the nuts.

When the device is to be stored on a ladder truck or elsewhere the anchor hooks are pressed down until the blocks thereon pass the shoulders 7 formed by the ends of the bars 6 of the frame, then the blocks will turn and allow the hooks to be folded inwardly as illustrated in Fig. 3.

In Fig. 3 and in the details shown in Figs. 4 and 5 the upper ends of the side bars 2 are extended upwardly above the hook members 13 and turned inwardly. The inturned lug ends 24 take the place of the Z-bars 15 to form the spaces for the lock washers, thus simplifying the construction.

It will be understood from this description that a strong and durable device is produced which will fit any ladder. It is easily and quickly attached or detached and when attached it cannot become accidentally removed and thus provides a safe and reliable device.

It will be readily understood that by slidably arranging the hook bars in the adjustable frame this device will fit any standard spacing of ladder rungs as well as any wide or narrow spacing.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be

be performed, I declare that what I claim is:—

1. In a hook attachment for anchoring a ladder to a projection of a building or the like, a pair of U-shaped frame members connecting and locking the overlapping and slidably adjustable, means for slidably connecting and locking and overlapping portions of said frame members to form a rigid rectangular frame to fit between the side rails of a ladder, a pair of hook bars mounted one on each of said frame members to engage a ladder rung, an anchor hook member provided with an extension bar slidably mounted in each of said frame members and having a hooked end to engage and interlock with an adjacent ladder rung, and spring means for holding said anchor hook members in an extended position.

2. A hook attachment for a ladder according to Claim 1 in which each of the U-shaped frames is formed of two L-shaped flat bars secured together, one leg of the upper L-shaped bar being arranged on the inner side of one leg of the lower L-shaped bar and extending substantially half the length of the leg of the lower L-shaped bar to form a shoulder, said anchor hook extension bars each having a guide block secured thereto to slidably engage the inner side of the leg of the adjacent upper L-shaped

bar, the anchor hook and guide block being capable of turning when the anchor hook is moved to bring the guide block below the said shoulder, and a coil compression spring encircling each of said anchor hook extension bars below said block and engaging the lower portion of the frame.

3. A hook attachment for a ladder according to Claim 1 in which an extension from each frame member is spaced above the top of the frame and encircles the anchor hook extension bar, and a tilting lock member encircling each hook extension bar is housed in said space to lock the anchor hook from being accidentally displaced.

4. A hook attachment for a ladder according to Claim 1 in which the overlapping ends of the U-shaped frame members are each provided with longitudinal slots, and guide bolts extend through said slots to hold the frames in sliding alignment and to lock the frames in adjusted positions.

5. A hook attachment for ladders substantially as described and shown in the accompanying drawings.

Dated this 15th day of December, 1947.

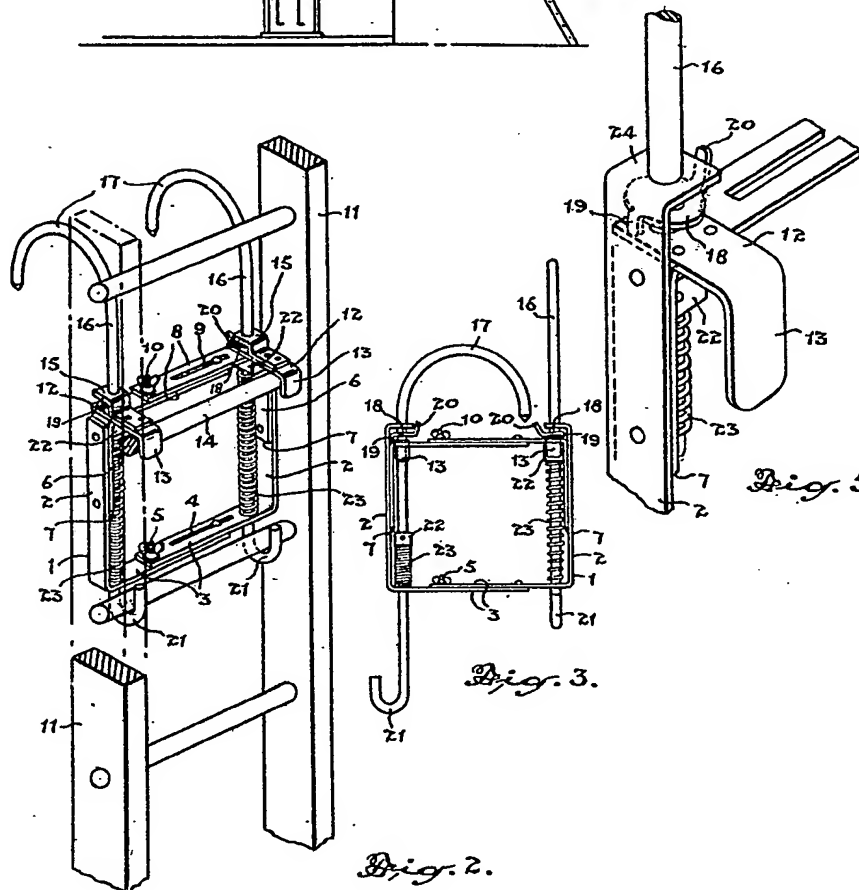
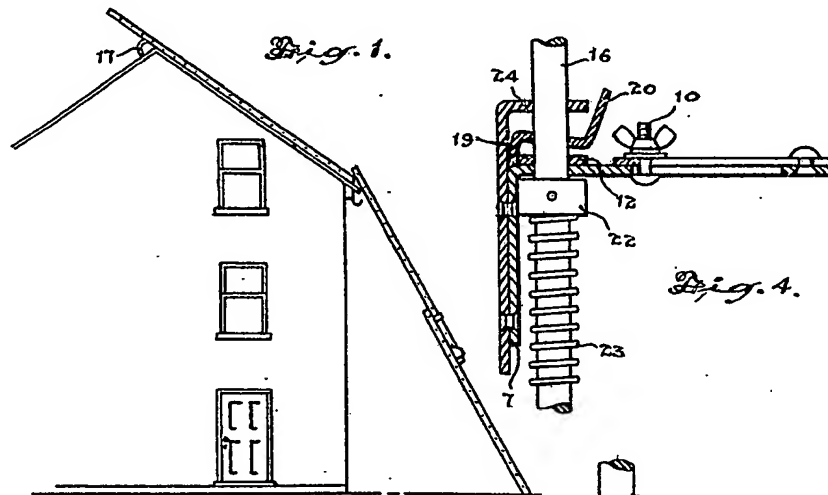
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[This Drawing is a reproduction of the Original on a reduced scale.]



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